UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,456	12/04/2001	Michael Kagan	3891-0101P	9182

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EXAMINER
DIVECHA, KAMAL B

ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/000,456	KAGAN ET AL.
	Examiner	Art Unit	
	KAMAL B. DIVECHA	2151	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *13 February 2006*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,3-12,14-19,31,33-42,44-49 and 60-63* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1, 3-12, 14-19, 31, 33-42, 44-49, 60-63* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Response to Arguments

Claims 1, 3-12, 14-19, 31, 33-42, 44-49, 60-63 are pending in this application.

Claim Rejections - 35 USC § 112

Applicant arguments in response 35 USC 112, second paragraph rejections presented in the prior office action are not persuasive.

For example: claim 4 recites "a plurality of schedule queues" in the claim. Claim 4 lacks antecedent basis because it is unclear which <u>one of the plurality of schedule queues</u> applicant is referring to, as there is more than one schedule queue.

<u>Please note</u> that the rejection can simply be overcome by amending the claim to recite "the plurality of schedule queues" instead of "the schedule queues".

Similar argument applied to the rest of the 35 USC 112, second paragraph rejections.

As such, the 35 USC 112, second paragraph rejections are maintained.

Specification

The objection to specification presented in the prior office action has been withdrawn.

<u>Applicant's arguments</u> with respect to claims 1, 3-12, 14-19, 31, 33-42, 44-49, 60-63 have been considered but <u>are moot in view of the new ground(s) of rejection.</u>

<u>Please note the followings:</u>

Applicant in response filed argues, "Pettey et al., are silent concerning the internal architecture of the various logics of bus router. As best understood, the internal architecture of these logics is same as the prior art structure described in the paragraph starting…a dual pipeline architecture with independent microprocessors…

By contrast, according to the present invention...a HCA is configured to handle both requester and responder communication flows using common hardware resources, rather than maintaining separate hardware paths for these functions as in devices known in the art."

And argues that there is neither a hint nor a suggestion of such an architecture in the prior art cited by the Examiner (see remarks, page 30).

As per examiner, the applicants argument is not persuasive for the at least following reasons:

First, the pending claims do not indicate, teach or suggest that the HCA is configured to handle both requester and responder communication flows using common hardware resources.

Secondly dependant claim 5 suggests using the plurality of transport service instances (i.e. plurality of hardware resources, see claim 5).

Therefore it is unclear how the structure of the rejected claims is different than the structure of the prior art.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1.   Claims 4-6, 9, 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recited the limitation "the schedule queues". There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the queues", "the instances", "the schedule queues" in the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the instances", "the queues", and "the execution engines". There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the queues" in the claim. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 16, the phrase "such packets" renders the claim indefinite because it is unclear whether the packets are outgoing response packets, incoming read request packets, outgoing or incoming write packets.

Claim 17 recites the limitation "the plurality of the instances" in the claim. There is insufficient antecedent basis for this limitation in the claim.

Please Note the listing above is not the complete listing of all the 35 USC 112, 2nd paragraph rejections and is provided as an exemplary.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 62-63 are rejected under 35 U.S.C. 102(e) as being anticipated by Gasbarro et al.

(hereinafter Gasbarro, U. S. Patent No. 6,948,004 B2).

As per claim 62, Gasbarro discloses a network interface adapter for interfacing between a

host and a network, comprising: a scatter engine for scattering, to a memory of the host, via a

common data flow path, both data received (i.e. incoming data) from a remote requester of the

network and data received from a remote responder of the network (col. 7 L40 to col. 8 L67, col.

13 L56 to col. 14 L14, col. 15 L59-67 and col. 23 L37-65: it's the inherent function of the

scattering engine to scatter the incoming data regardless of the source of the data).

As per claim 63, Gasbarro discloses a network interface adapter for interfacing between a

host and a network, comprising: a gather engine for gathering, from a memory of the host, via a

common data flow path, both data sent (i.e. outgoing data) to a remote requester of the network

and data to be sent to a remote responder of the network (col. 7 L40 to col. 8 L67, col. 13 L56 to

col. 14 L14, col. 15 L59-67 and col. 23 L37-65: it's the inherent function of the gather engine to

gather the outgoing data regardless of the destination of the data).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3.   Claims 1, 3-12, 14-19, 31, 33-42, 44-49, 60 and 61 are rejected under 35 U.S.C. 103(a) as

being obvious over Pettey et al. (U. S. Patent No. 6,594,712 B1) in view of Gasbarro et al.

(hereinafter Gasbarro, U. S. Patent No. 6,948,004 B2).

As per claim 1, Pettey discloses a network interface adapter, comprising: a host interface

for coupling to a host processor (fig. 2 item #206, fig. 18b item #308); an outgoing packet

generator for delivery to a remote responder responsive to a request submitted by the host

processor via the host interface col. 7 L65 to col. 8 L7, col. 14 L20-39, fig. 3 item #306); a

network output port, coupled to receive the request packet from the output packet generator, so

as to transmit the outgoing request packet over a network to the remote responder (col. 9 L1-5,

fig. 3 item #308); a network input port, for coupling to the network so as to receive an incoming

response packet from the remote responder, in response to the outgoing request packet sent

thereto, and further to receive an incoming request packet sent by a remote requester (fig. 3 item

#308 and fig. 2 item #204); an incoming packet processor, coupled to the network input port so

as to receive and process both the incoming response packet and the incoming request packet,

and further coupled to cause the outgoing packet generator, responsive to the incoming request

packet, to generate in addition to the outgoing request packet, an outgoing response packet for

transmission via the network output port to the remote requester (col. 10 L4-9, col. 14 L40-54

and fig. 3 item #306), wherein the outgoing request packet comprises an outgoing write request

packet containing write data taken from a system memory accessible via the host interface (fig.

18a: describes the process of RDMA WRITE operation; fig. 16 shows the I/O WRITE

operation), and wherein the outgoing response packet comprises an outgoing read response

packet containing read data taken from the system memory in response to the incoming request

packet (fig. 18a and fig. 16) and a scatter/gather list created by CPU (fig. 9).

However Pettey does not explicitly disclose the process of gathering both the write data

and the read data from the system memory for inclusion in the respective outgoing packets.

Gasbarro, from the same field of endeavor, explicitly discloses an interface adapter (fig.

7) comprising a gather engine providing a gather list describing virtual addresses to fetch

outgoing whether it's a read or write data from local system memory for inclusion in the

outgoing packets via a common data flow path (col. 8 L10-34, col. 11 L14-45, col. 12 L64 to col.

13 L5, col. 15 L20-67, col. 21 L16-56: please also note that it is the inherent function of the

gather engine to gather the data in response to either write or read request regardless of incoming

and outgoing packets).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time

the invention was made to modify Pettey in view of Gasbarro, in order to gather both the write

data and the read data from the system memory for inclusion in the respective outgoing packets,

since Gasbarro teaches the process of gathering outgoing data from the system memory.

One of ordinary skilled in the art would have been motivated because it would have

enabled the process of fetching outgoing data from system memory whether it's a read or write

data (Gasbarro, col. 8 L28-34).

As per claim 3, Pettey discloses an adapter wherein to submit the request, the host

processor writes a request descriptor indicative of the write data to a first memory location, and

wherein to cause the outgoing packet generator to generate the outgoing response packet, the

incoming packet processor writes a response descriptor indicative of the read data to a second

memory location (this approach is known as double buffering, col. 11 L18 to col. 12 L45 and fig.

7b) and wherein the WQE includes SGL local address field for specifying the physical address in

local memory of a scatter/gather list, however Pettey does not disclose a process adapted to read

information from the descriptors and to gather the read data and the write data responsive

thereto.

Gasbarro discloses a scatter/gather engine adapted to read information from the indicators

or descriptors and to gather or fetch the read data and the write data (col. 8 L28-41).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time

the invention was made to modify Pettey in view of Gasbarro, in order to read information from

the descriptors and to gather or fetch the write data and the read data from the system memory,

since Gasbarro teaches the process of gathering outgoing data from the system memory.

One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 1.

As per claim 4, Pettey discloses an interface adapter wherein the outgoing packet generator comprises a plurality of schedule queues (fig. 7a block #108), and is adapted to generate the outgoing request packet (fig. 16) and the outgoing response packet responsive to respective entries placed in the queues (fig. 18a item #1808, 1822, fig. 22a item #2224, 2226 and fig. 15).

As per claim 5, Pettey discloses an interface adapter wherein the network input and output ports are adapted to receive and send the incoming and outgoing packets, respectively, over a plurality of transport service instances, and wherein the outgoing request packet and the outgoing response packet are associated with respective instances among the plurality of transport service instances (fig. 7a item #108), and wherein the outgoing packet generator is adapted to assign the transport service instances to the queues based on service parameters of the instances, and to place the entries in the schedule queues corresponding to the transport service instances with which the incoming and outgoing packets are associated (col. 8 L2-26, col. 11 L1-36 and col. 14 L10-54 and col. 17 L20-40).

As per claim 6, Pettey discloses an adapter wherein the outgoing packet generator comprises one or more execution engines, which are adapted to generate the outgoing request packet and the outgoing response packet responsive to a list of work items respectively associated with each of the transport service instances (col. 1 L54 to col. 2 L21, col. 7 L65 to col. 8 L7, col. 11 L18-53), however Pettey does not disclose a scheduler, which is coupled to select

the entries from the queues and to assign the instances to the execution engines for execution of

the work items responsive to the service parameters.

Gasbarro discloses an adapter comprising a scheduler for scheduling the next virtual

interface to the context manager and supporting priority of traffic for data packets associated

with send Queue and Receive Queue of the work queue pair (col. 15 L50-58).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time

the invention was made to modify Pettey in view Gasbarro, in order to include a scheduler for

selecting the entries from the queues and to assign the instances to the execution engines for

execution of the work items responsive to the service parameters.

One of ordinary skilled in the art would have been motivated because a scheduler would

have supported the priority of traffic for data packets associated with Send queue and Receive

queue of the work queue pair (Gasbarro, col. 15 L50-55).

As per claim 7, Pettey discloses an adapter wherein the transport service instances

comprise queue pairs (fig. 7a-7b: shows plurality of queues including queue pairs).

As per claim 8, Pettey discloses an adapter wherein the outgoing packet generator

comprises one or more control registers to which the host processor and incoming packet

processor write in order to place the entries in the queues (Pettey, col. 17 L20-56), however

Pettey does not explicitly disclose the one or more register to be a doorbell registers.

Gasbarro, from the same field of endeavor explicitly discloses a channel adapter

comprising one or more doorbell registers (col. 15 L20-50).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time

the invention was made to modify Pettey in view of Gasbarro, in order to replace the one or more

control registers with the doorbell registers, since Gasbarro teaches and discloses the usage of doorbell registers.

One of ordinary skilled in the art would have been motivated because doorbell registers allows software the capability to enable automatic event generation, and making doorbell registers memory mapped allows applications the ability to write those registers thereby controlling event generation (Gasbarro, col. 15 L20-32).

As per claim 9, Pettey discloses an adapter wherein the incoming request packet comprises a write request packet carried over the network on a reliable transport service, and wherein responsive to the incoming write request packet, the incoming packet processor is adapted to add an entry to the entries placed in the queues, such that responsive to the entry, the outgoing packet generator generates an acknowledgement packet (col. 19 L55 to col. 20 L33).

As per claim 10, Pettey disclose an adapter wherein the incoming request packet comprises an incoming read request packet, and wherein responsive to the incoming read request packet, the incoming packet processor is adapted to prepare a read response work item in a memory location, and wherein the outgoing packet generator is coupled to read the response work item from the memory location and, responsive thereto, to generate a read response packet (fig. 15: describes an incoming read request packet, and col. 13 L58 to col. 14 L9, L40-65 and col. 15 L65 to col. 16 L6).

As per claim 11, Pettey discloses the process of receiving a read request (fig. 15 item #1000); the process of receiving a write request (fig. 16 item #1000); and the process of conveying or sending the write data to the host interface (fig. 15 item #1100), however Pettey does not disclose the process of receiving an incoming write request packet containing write data

to be written to a system memory accessible via the host interface after receiving the incoming

read request packet, and the process of conveying the write data to the host interface without

waiting for execution of the read response work item. But it would have been obvious to a person

of ordinary skilled in the art at the time the invention was made to modify Pettey (i.e. modify

Pettey's figure 15 and 16 so that the incoming packet processor of the adapter (see the rejected

claim 1) is configured so that the write request work queue entry is executed first with respect to

read response work queue entry) in order to convey the write data to the host interface without

waiting for execution of the read response work item, since Pettey teaches receiving incoming

write request, receiving incoming read request packet, executing both of the requests, and

conveying the write data to the host interface. One of ordinary skilled in the art would have been

motivated because it would have improved the efficiency and enhanced the performance of the

interface adapter.

As per claim 12, Pettey discloses an adapter wherein the incoming packet processor is

configured so that when it receives an incoming write request packet containing write data to be

written to a system memory accessible via the host interface before receiving the incoming read

request packet, it prevents execution of the read response work item until the write data have

been written to the system memory (col. 21 L12 to col. 22 L6).

As per claim 14, Pettey discloses an adapter wherein the outgoing packet generator is

adapted, upon generating the outgoing request packet, to notify the incoming packet processor to

await the incoming response packet so as to write a completion message to the host interface

when the awaited packet is received (col. 20 L17-32).

As per claim 15, Pettey discloses an adapter wherein the incoming request packet comprises an incoming read request packet specifying data to be read from a system memory accessible via the host interface, and wherein the incoming packet processor is adapted to write a response descriptor to a memory location indicating the data to be read from the system memory responsive to the read request packet (fig. 18a item #1822), and wherein the outgoing packet processor is adapted to read the response descriptor from the memory location and, responsive thereto, to read the indicated data and to generate the outgoing response packet containing the indicated data (fig. 18a item #1832; col. 15 L5 to col. 16 L6).

As per claim 16, Pettey discloses an adapter wherein the incoming read request packet is one of a plurality of incoming read request packets, and wherein the incoming packet processor is adapted to write the response descriptor to the memory location as part of a list of such descriptors, responsive to which the outgoing packet processor is adapted to generate the outgoing response packet as part of a sequence of such packets (fig. 19a, fig. 20 and fig. 9; col. 23 L20 to col. 24 L27; col. 11 L18-37).

As per claim 17, Pettey discloses an adapter wherein the network input and output ports are adapted to receive and send the incoming and outgoing packets, respectively, over a plurality of transport service instances, and wherein the incoming packet processor is adapted to prepare the list of the response descriptors for each of the instances as a part of a response database held for the plurality of the instances in common (fig. 3 item #308, fig. 19b item #508, and fig. 23).

As per claim 18, Pettey discloses an adapter wherein the transport service instances comprise queue pairs (fig 7a item #712).

As per claim 19, Pettey discloses an adapter wherein the request comprises a write

request, which is submitted by the host processor by generating a request descriptor indicating

further data to be read from the system memory for inclusion in the outgoing packet (fig. 10),

and wherein the output packet generator is adapted to read the request descriptor and, responsive

thereto, to generate the outgoing request packet as a write request packet containing the indicated

further data (fig. 18a item #1832; col. 12 L58 to col. 13 L18, col. 15 L17-31 and fig. 16).

As per claim 60, Pettey discloses a network interface adapter, comprising: a host

interface for coupling to a host processor (fig. 2 item #206, fig. 18b item #308); an outgoing

packet generator for delivery to a remote responder responsive to a request submitted by the host

processor via the host interface col. 7 L65 to col. 8 L7, col. 14 L20-39, fig. 3 item #306); a

network output port, coupled to receive the request packet from the output packet generator, so

as to transmit the outgoing request packet over a network to the remote responder (col. 9 L1-5,

fig. 3 item #308); a network input port, for coupling to the network so as to receive an incoming

response packet from the remote responder, in response to the outgoing request packet sent

thereto, and further to receive an incoming request packet sent by a remote requester (fig. 3 item

#308 and fig. 2 item #204); an incoming packet processor, coupled to the network input port so

as to receive and process both the incoming response packet and the incoming request packet,

and further coupled to cause the outgoing packet generator, responsive to the incoming request

packet, to generate in addition to the outgoing request packet, an outgoing response packet for

transmission via the network output port to the remote requester (col. 10 L4-9, col. 14 L40-54

and fig. 3 item #306), wherein the incoming response packet comprises an incoming read

response packet sent by the remote responder in response to the outgoing request packet, the

incoming read response packet containing read data to be written to a system memory accessible via the host interface, and wherein the incoming request packet comprises an incoming write request packet containing write data to be written to the system memory (fig. 16).

However Pettey does not disclose a scatter engine, which is coupled to scatter both the write data and the read data from the respective incoming packets to the system memory.

Gasbarro, from the same field of endeavor, discloses an adapter comprising a scatter engine providing a scatter list describing the virtual addresses to place incoming data in local system memory (col. 8 L10-40: please note that it is the inherent function of the scatter engine to scatter the incoming data in response to either write or read request).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Pettey in view of Gasbarro, in order to scatter both the write data and the read data from the respective incoming packets to the system memory, since Gasbarro teaches the process of placing the incoming data to the systems memory.

One of ordinary skilled in the art would have been motivated because scatter engine would have describe exactly where to store incoming data within local system memory (Gasbarro, col. 8 L35-40).

As per claims 31, 33-42, 44-49 and 61 they do not teach or further define over the limitations in claims 1, 3-12, 14-19 and 60. Therefore claims 31, 33-42, 44-49 and 61 are rejected for the same reasons as set forth in claims 1, 3-12, 14-19 and 60.

Additional References

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Beukema et al., U. S. Patent No. 6,578,122 B2.

b. Avery, U. S. Patent No. 6,611,883 B1.

c. Thomas et al., U. S. Patent No. 5,922,046.

d. Coffman et al., U. S. Patent No. 6,718,370 B1.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is 571-272-5863. The examiner can normally be reached on Increased Flex Work Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kamal Divecha
Art Unit 2151
April 13, 2006.
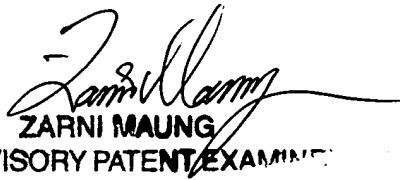
ZARNI MAUNG
SUPERVISORY PATENT EXAMINER